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COMPANY

INTEROFFICE MEMORANDUM

DATE: September 27, 1999

TO: S. M. Nesta, Environmental Systems and Stewardship, T130C, X6386

FROM: C. A. Patnoe, Environmental Systems and Stewardship, T130C, X2440

SUBJECT: REVIEW OF REMOTE OPERATIONS SIZE-REDUCTION SYSTEM IN BUILDING 776 - CAP-153-99

Ref: Letter #SMN-117-99 from S. M. Nesta to distribution entitled "Review of Remote Operations Size-reduction System in Building 776", attached Environmental Checklist, and information from project personnel

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Per your request, Air Quality Management (AQM)/Radian International has evaluated the Building 776 remote operations size-reduction facility for air quality regulatory issues. Based on preliminary information provided in the environmental checklist and by project personnel, the project will require that an Air Pollutant Emission Notice (APEN) be submitted to the Colorado Department of Public Health and Environment (CDPHE) prior to initiation of construction activities. The process will also require continuous radionuclide air monitoring in compliance with the requirements of 40 CFR 61, Subpart H. The project will not require an air emissions permit (if it's a CERCLA process), or Environmental Protection Agency (EPA)/CDPHE approval or notification. This air evaluation is based on the following assumptions:

- The containment structure will be located in Room 127 of Building 776, and will have its own ventilation system that exhausts to the outside through 2 banks of HEPA filters;
- The robotic cutting system will be a plasma arc cutter that operates a maximum of 6 hours per day, 5 days per week, 52 weeks per year;
- The plasma arc cutter has a maximum cutting rate of 152.4 centimeters per minute, with a cut width of 0.3176 centimeters and an operating temperature of 40,000 degrees centigrade;
- The plasma arc cutter has an emission rate of 0.5 – 4 liters per minute of nitrogen dioxide;
- Based on material balance data from the Los Alamos National Laboratory, approximately 0.08 pounds of metal is lost per linear foot of metal cut with a plasma arc cutter. Of this 0.08 pounds, 20 percent is assumed to be lost as particulates (CDPHE meeting on 4/18/91);
- The gloveboxes are contaminated at an average of 1 million disintegrations per minute per 100 square centimeters; and
- Lead will be stripped from the gloveboxes prior to size-reduction activities.

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Radionuclide Air Quality Assessment
Radionuclide air effluent emissions from Department of Energy (DOE) facilities are governed by the Colorado Air Quality Control Commission's (CAQCC) Regulation No. 8, Part A, Subpart H (40 CFR 61, Subpart H) *National Emission Standards for Emissions of Radionuclides Other Than Radon from DOE Facilities.* The regulation specifies several requirements that are applicable to the Rocky Flats Environmental Technology Site (Site), including environmental monitoring, reporting, permitting, and quality assurance requirements. Section 61.93 mandates continuous radionuclide air emission monitoring for all points that have an estimated potential effective dose equivalent (EDE) to the most impacted public receptor of greater than 0.1 millirem per year (mrem/yr), based on uncontrolled emissions. Section 61.96(b) requires that an application for approval (Section 61.07) and notification of start-up (Section 61.09) be filed with the EPA and the CDPHE for any new or modified source of radionuclide emissions if estimated controlled emissions from the source would cause the most impacted public receptor to receive an EDE of 0.1 mrem/yr or greater.

Based on project information and the above listed assumptions, the estimated EDE to the most impacted public receptor resulting from controlled radionuclide emissions from the Building 776 remote operations size-reduction facility is 5.3E-05 mrem/yr, and the estimated EDE resulting from uncontrolled radionuclide emissions is 0.53 mrem/yr. The project will not require EPA/CDPHE approval/notification, however, the project does exceed the continuous monitoring threshold and continuous radionuclide air monitoring that meets the requirements of 40 CFR 61, Subpart H will be required for the duration of the project.

Non-radionuclide Air Quality Assessment
CAQCC Regulation No. 3 (Reg. 3) contains APEN, air quality construction permit, and air quality operating permit provisions that are applicable to all sources of air pollutants, except as otherwise exempted in the regulation. Reg. 3 states that except where specifically authorized by the terms of Reg. 3, no person shall commence construction or operation of any stationary air emission source or modification of a stationary source without first obtaining or having a valid APEN and/or an air emissions permit from the CDPHE, Air Pollution Control Division.

Based on preliminary information from project personnel, and on potential particulate emissions from plasma arc cutting, emissions of particulates are estimated to be 3.7 tons per year. This exceeds the permitting and reporting thresholds contained in Reg. 3. If the project is governed under CERCLA requirements, it is exempt from air emissions permitting, however, an APEN must be submitted to CDPHE prior to initiating construction activities.

If the above listed assumptions are not accurate, or if there are any significant changes to the project parameters that were provided in the environmental checklist, project description, or from project personnel, AQM must be notified as soon as possible and a new assessment will be performed. Please contact Mike Putney of AQM/Radian International at X2692 for any questions regarding this assessment.

MTP

cc:
M. Hyder (Radian)
M. Putney (Radian)

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